

[54] **POLYURETHANE POLYMERS
CHARACTERIZED BY LACTONE GROUPS
AND HYDROXYL GROUPS IN THE
POLYMER BACKBONE**

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[57] **ABSTRACT**

Polyurethane polymers characterized by a molecular weight above 6,000 and having lactone groups and hydroxyl groups in the polymer backbone are prepared by reacting a mixture of polyols, a polyfunctional lactone and a polyfunctional isocyanate proportioned so as to provide the desired polymer properties. The product is soluble in alkaline solutions and may be used for light sensitive photographic layers on films, paper or glass; in drug delivery systems, as burn dressings, in body implants such as vascular prosthesis, in molding compositions, and in the manufacture of catheters. The novel polymers also find use in the manufacture of artificial finger nails, finger cots, adhesives, and in protective and hydrostatic drag resistant coatings. The water absorptivity of the polyurethane lactone polymers is above 10%, preferably in the range of about 20% to 60%, and these polymers may range in their physical properties from rigid solids to completely gel-like high water absorptive polymers. The polymers of the present invention can provide a leachable substrate wherein the leaching agent may be water, gases, alcohols, esters and body fluids, e.g., animal or human.

69 Claims, No Drawings